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ABSTRACT

In order to ascertain the extent to which undergraduate full-time and part-time students at Lake Forest College, Illinois, were aware of existing library reference services, a telephone interview of randomly selected students was conducted in spring 1982, using a revised questionnaire originally developed for a similar study at the University of Chicago in 1975. Of a population of 1,072 undergraduates, 97 were selected for surveying; a total of 91 interviews were completed. Prior to the survey, reference librarians were contacted to determine the full extent of available reference services; they were also asked to predict student awareness of services. The survey found that students were aware of close to three-quarters of the reference services, but there was an indication that some services, particularly online searching services, would be more heavily used if students knew they were offered. Discrepancies were discovered between students' survey answers and librarians' predictions of student awareness, indicating that a similar methodology could be profitably used by other reference librarians to confirm or assess user awareness. The survey report contains 15 tables and 3 illustrations, including the results of regression analysis performed on the survey findings; a sample questionnaire; and a 17-item bibliography. (Author/ESR)

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THE UNIVERSITY OF CHICAGO

REFERENCE SERVICES IN THE LIBERAL ARTS COLLEGE LIBRARY: STUDENT AWARENESS

A DISSERTATION SUBMITTED TO
THE FACULTY OF THE GRADUATE LIBRARY SCHOOL
IN CANDIDACY FOR THE DEGREE OF
MASTER OF ARTS

BY

LINDA JEAN DURFEE

CHICAGO, ILLINOIS

AUGUST, 1982

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ABSTRACT

Few studies have addressed the notion that there may be members of academic communities who are unaware of the wide variety of reference services available to them, or who are simply uncertain what to expect. I interviewed, by telephone, a stratified random sample of Lake Forest College students, using a revised version of a procedure developed by Mollie Sandock at the University of Chicago in 1975. The primary aim of the study was to ascertain the extent to which Lake Forest students are aware of existing reference services in Donnelley Library. Overall, their awareness was found to be relatively high -- they were aware of close to three-quarters of the services and had a strong general idea of what to expect -- yet there was indication that there are some services which would be more heavily used if students knew they were offered. The study was also meant to test, in a new setting, a revised version of a tool which could conceivably be used in a variety of libraries. Discrepancies between students' answers and librarians' predictions suggest that, when the alternative is merely to rely on impressions, a similar methodology could be used profitably by other reference librarians wanting to confirm or assess user awareness.

CHAPTER I

INTRODUCTION

A variety of explanations for nonuse of academic library reference services and deterrants to consultation has been suggested by studies and articles on library usage. In 1970, John Lubans interviewed a random sample of Rensselaer Polytechnic Institute undergraduates who had indicated nonuse in a 1968 census of RPI library use.[1] He concluded, from twenty-seven interviews, that "the use of the library, especially in the eyes of the nonuser, is strictly course related ... the inspiration or the inclination or the time are not there for the student to extend himself."[2] In a 1972 study at Syracuse University, Mary Jane Swope and Jeffrey Katzer asked 160 randomly chosen Carnegie Library patrons if they "had a question" and whether or not they would ask for a librarian's assistance. Both their study and Roger Horn's reply, based on his own experiences at Clarion State College, noted that the physical location of the reference desk, the reluctance of the student to bother the librarian or to admit his ignorance by asking a question, even an unsatisfactory encounter in the past, all contribute to "Why They Don't

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[1]John Lubans, Jr., "Nonuse of an Academic Library," College and Research Libraries 32 (September 1971): 362-67.

[2]Ibid., p. 363.

Ask Questions."[1] There is, however, a dearth of studies which address the notion that there may be members of academic communities, aside from those who have no need to approach a reference librarian, who are unaware of the wide variety of reference services available to them, or who are simply uncertain what to expect. (Indeed, the implication is that those reluctant to "ask a question," or to seek assistance, are amongst that group.[2])

In 1973, Jerold Nelson surveyed a thirty per cent random sample of full-time faculty at six California colleges to measure the degree to which these 1,067 faculty members were aware of various reference services. From those questionnaires returned (seventy-three per cent), he determined that the average faculty member was aware of barely half the services available at his college library (of thirteen services mentioned, eleven were offered by each of the libraries), with such variables as rank, degree of library use, and field of discipline affecting awareness. Furthermore, when asked to indicate desire for a particular service, they expressed interest in services they thought unavailable but which, in fact, were available: "for nearly every service, there were individuals who desired the service without knowing it was already being offered."[3]

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[1]Mary Jane Swope and Jeffrey Katzer, "Why Don't They Ask Questions," RQ 12 (Winter 1972): 161-66. (For a discussion of Swope and Katzer's methodology and implication of their results, see Mollie Sandock, "Student Awareness and Use of Reference Services in a Large University Library," M.A. thesis, University of Chicago, 1976, pp. 4-5.) Roger G. Horn, "Why They Don't Ask Questions," RQ 13 (Spring 1974): 225-33.

[2]Sandock, p. 35.

[3]Jerold Nelson, "Faculty Awareness and Attitudes Toward Academic Library Reference Services: A Measure of Communication," College and Research Libraries 34 (September 1973): 273-74.

Soon after Nelson's investigation, Mollie Sandock devised a similar study, aimed at students. She interviewed (by telephone, whereas Nelson used a questionnaire which left room for respondents to seek out correct answers) a stratified random sample of undergraduate, graduate and professional school students at the University of Chicago to ascertain their awareness of Regenstein Library reference services. Results of her study showed that the level of awareness of these services was low on the whole, but, as with the faculty in Nelson's study, linked to the students' academic discipline, level of study, number of years at the University, and so forth. Across the board, "students were generally aware of only a little over half of the services available to them," and again there was a desire expressed for "services which are currently being provided but which they did not realize already exist."[1]

I was struck by the fact that Chicago undergraduates scored lower in awareness than other students. Among those who did not know where the reference department is, who considered it difficult to find, who had never used Regenstein reference services, and who did not know what the reference staff does, the percentage of undergraduates was always greater than the percentage of graduate and professional school students. Yet, for every service but one, undergraduates' desire for a service was higher than their awareness of it, and, for four of the services, undergraduates' desire equalled or exceeded that of other students in the sample.

The size and character of the University of Chicago, which is predominantly a research institution and is oriented toward the needs of scholarship, is one likely explanation for lower undergraduate awareness.

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[1]Sandock, p. 2.

Also, there is a separate collection intended for use by University of Chicago college students. Thus, one might ask what would happen if such a study were replicated in a library aimed chiefly at serving the undergraduate, and with a policy of encouraging library use.

Lake Forest College, a small liberal arts college in Illinois, states in its Bulletin that:

> ... library research within courses and on special projects is essential to the development of a well-rounded, independent intellect ... students acquire considerable sophistication in library use and research techniques which serve them well not only as undergraduates but also later in their professional careers.[1]

According to Lake Forest's reference librarian, the college library "has been involved in formal user education for a numbers of years."[2] In fact, since 1978, Lake Forest, along with other institutions, has been the recipient of generous CLR-NEH grants to integrate the library more fully into the education process. In this smaller, college library, where reference services might be termed aggressive, one would expect more frequent student use and, consequently, higher awareness. Yet what is the penetration at Lake Forest? Is the average student aware that there are people whose job it is to help make the library more accessible to him? Are there services offered which more students would use if they realized they were available? If so, if there a particular group of students not being reached?

In the spring 1981 term, as part of a self study, written questionnaires were distributed in Lake Forest's Donnelley Library over a two-

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[1]Lake Forest College Bulletin, 1979-80, p. 23.

[2]Joann Lee and Arthur H. Miller, Jr., "Introducing Online Data Base Searching in the Small Academic Library: A Model For Service Without Charge to Undergraduates," Journal of Academic Librarianship 7 (March 1981): 15.

day period until 122 students (approximately ten per cent of the student body) had been polled, in an attempt to rank user needs for all library services and to get a feel for how well those needs were being met. Coincidentally, respondents were fairly uniformly distributed by class and major: "Thus we are confident that the survey (albeit a sample, and not a universal poll) can be considered valid for the community as a whole."[1] As they acknowledge, the report is biased toward library users--users on only two particular days; yet it is worth nothing that nearly half of those polled considered reference assistance from a librarian "very important," while fewer than five per cent of them had "never used" reference assistance. Even more pertinent to this study, though, is the comment by one respondent that "there should be a reference librarian present on weekends." Here we have at least one library user who is desirous yet unaware of at least one available reference service.

The following study was an attempt to answer the questions posed above, using a revised version of Sandock's procedure (interviewing a larger per cent of the population and including questions about a greater number of services not offered), tailoring it to this small, liberal arts college library. Data gathered in such a library could not be directly compared to those from the University of Chicago study, but Sandock's findings certainly served as a benchmark as her instrument was tested in a different environment.

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[1] "Report of the Users and Services Task Force," in Lake Forest College Libraries, "Assisted Self Study: Final Report, Part II Appendices," Lake Forest College, 1981, Appendix VII, p. 4.

CHAPTER 1

METHODOLOGY

A quick and inexpensive means of obtaining information on Lake Forest students' awareness of reference services was to question them directly; in this case a structured questionnaire administered in a telephone interview situation was selected. Such interviews are easier to conduct than personal interviews, and yet they still retain the advantages associated with a personal interview by offering opportunity for probes and clarification, by ruling out the chance to "look up the answer," and by promising higher response rates than those associated with questionnaire surveys.

It was possible that, in a residential community this size, word would travel quickly that someone was calling students, asking them questions about the library, and thus bias the results. However, for many of these students this was nothing new--they have been polled before regarding their use of the library--and it seemed almost presumptuous to think that these interviews would be memorable enough to merit lengthy discussion amongst them. I considered concluding each interview with a statement to the effect that the study was being done in cooperation with the library staff and, to ensure reliable results, we would appreciate it if they not discuss specific details of the interview with their friends. However, I decided it was preferable not to give them ideas; instead, I attempted to complete as many interviews as possible within each stratum

before going on to the next, and when evaluating the data, bore the possibility of bias in mind.)

In order to determine what reference services are available--particularly those of which the staff is most proud--and to shape and refine the questionnaire, I consulted with Arthur Miller, Librarian; Joann Lee, Head of Reader Services; and Patricia Brennan, Assistant Librarian and Archivist. A glance at six months of the log maintained by the department (a list of questions asked and tools used to answer them) also served to demonstrate the range of reference services provided.

Once a satisfactory questionnaire was developed, I conducted a pretest, the purpose of which, for this study, was not so much to determine if students would cooperate (no one Mollie Sandock called in 1975 refused the interview) as to ensure that each question was clearly stated, and to establish the length of the interview. In light of this, and for the sake of convenience, ten University of Chicago undergraduates, from a variety of classes and disciplines, and three friends who are Chicago graduate students, were chosen for the pretest. Following the pretest interviews, the students involved were encouraged to voice their reactions, to elaborate on their answers, and to comment on the questionnaire. Thus, interaction with the pretest sample served to suggest additional relevant questions and to uncover ambiguities or problems with the questions as they stood.

The questionnaire that was finally used follows in the Appendix. In the second section, those services preceded by an asterisk are not currently offered by Donnelley's reference staff. For the most part, the inclusion of these services was intended to discourage or detect indiscriminate "yes" answers, although in one case (reference service in the Science Library) the Donnelley staff might consider adding the ser-

vice if sufficient interest is expressed. Each time a respondent indicated that a service is not available, he was asked if this is a service he would need. This wording was chosen to overcome any tendency for students to indicate their desire for more services so long as they are free, and to facilitate determining whether unknown services really are seen as important to the students.

I thought it would also be interesting to match the librarians' perceptions of students' awareness to their actual awareness. To do this, in addition to interviewing the Lake Forest students, I mailed a revised copy of the second portion of the questionnaire (dealing with reference services) to the four people who provide the bulk of Donnelley Library's reference services--John Lee, Guynell Williams, Arthur Miller, and Patricia Brennan. Each was then asked to predict, as well as possible for each question about an available service, the overall percentage of students who would answer "yes" to that question, and to give a range of values that would most likely include that percentage. It was felt that a comparison of the students' responses and the librarians' predictions could prove useful in determining how well the reference staff perceives its patrons' attitudes and behavior.

Since it would be impossible to interview the entire student body, a random sample was necessarily selected. Using computer generated random numbers and the Lake Forest Spring 1982 Enrollment Book, a proportionate random sample (nine per cent of each stratum) of registered full- and part-time students (which of course includes non-users of the library as well as users) was chosen from twelve strata:

freshmen	
sophomores	undeclared major humanities sciences social sciences
juniors	undeclared major humanities sciences social sciences
seniors	humanities sciences social sciences

Auditors, students in the Master of Liberal Studies program, and unclassified, special students were omitted from the sample. The five independent scholars were categorized with their advisors' departments.

Stratification precludes the event of selecting an unrepresentative or lopsided sample--comprising disproportionate numbers of seniors in the sciences and freshmen, for example--thereby ensuring greater precision for the sample estimates. It also provides that one may focus on the sample results of one subpopulation as compared with another,[1] so long as there are "enough" elements in each stratum.

Table 1 shows the number of students in each of these strata, the number randomly selected for interviews, as well as those actually reached. (It should be noted that one sophomore, a social science major, was inadvertently miscoded as not having declared a major. However, it was considered best to include his responses with those of the other sophomores in the social sciences. Hence, the higher number of completed interviews than sample elements in that subgroup.)

The third week after Lake Forest's spring break (that is, the

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[1]Leslie Kish, "Selection of the Sample," in Research Methods in the Behavioral Sciences, ed. Leon Festinger and Daniel Katz (New York: Dryden Press, 1953), pp. 191-92.

TABLE 1

NUMBER OF STUDENTS IN POPULATION AND SAMPLE

	Population	Sample	Completed Interviews
Freshmen	281	25	24
Sophomores	286	26	25
Social Sciences	80	7	8
Humanities	37	3	2
Sciences	31	3	3
Undeclared	138	13	12
Juniors	257	23	20
Social Sciences	123	11	9
Humanities	47	4	3
Sciences	36	3	3
Undeclared	51	5	5
Seniors	248	23	22
Social Sciences	155	14	13
Humanities	65	6	6
Sciences	28	3	3
Total	1,072	97	91

week beginning March 29th) seemed a good time to begin the research, since all students (aside from mid-year transfers and exchanges) would have experienced at least a semester and a half of study at the college. By then they were all likely to have settled back to work, and yet none would be in the midst of exams or under a great deal of pressure.

The interviews went smoothly, each taking eight to twelve minutes to complete. In only eight days I had reached better than half the sample, some on the first try, others only after many attempts or after a second call at a more convenient time. The majority of interviews fell between 4 and 6 p.m., but times ranged from 9:45 a.m. to 11:30 p.m. At my request, Arthur Miller sent a letter and follow-up memo to a number

of students with disconnected and unpublished numbers or no telephone at all. As a result of his communications, and messages left with resident advisors, parents, and roommates, ten students telephoned me for interviews.

By April 26th I had spoken with ninety-two Lake Forest students--a ninety-four per cent response rate. Only one did not cooperate (he suggested that cheese-cake be added as reference service!), and thus had to be counted as a "non-response." Aside from one other student who was most reluctant to be interviewed ("Can't I just give you someone else's name?") and one who giggled throughout the call, the students I telephoned were, on the whole, pleased to have been chosen and happy to be of assistance. A few asked how they had been selected, others wanted to know the purpose of the study. Before hanging up, one student thanked me "for making the day a little less boring." There were only five students I never reached: one with no telephone from each class, and a fifth who, although she was on the list of currently registered students, was in Greece till the end of term.

CHAPTER III

RESULTS

Students' responses

Tables 2 through 7 and 13 through 15 summarize the sample's answers to the questionnaire. Unless otherwise specified, when two columns of figures are shown, the column on the left presents actual number of respondents, while that on the right presents percentages of respondents. In cases where percentages total more than 100 per cent, this is due to multiple answers.

Background data

All of the ninety-one students interviewed indicated that they have used Donnelley Library (see Table 2). In fact the question, "Have you ever had occasion to use Donnelley Library?" elicited more than a few chuckles and such responses as, "I live there!" Of the two libraries on campus, Donnelley was indicated by eighty-six per cent of the sample as the one usually used. All but one student (who had been in Donnelley only once, but still demonstrated a high awareness of reference services) knew where the reference desk is. However, only sixty-six per cent of the students had ever consulted the reference staff, typically either for help finding source material for a paper or research project, or for Interlibrary Loan. Yet, despite the fact that one-third of the sample had never used the reference department (a much greater percentage than the four per cent--of a sample biased toward heavy library users--who

TABLE 2

COMBINED SAMPLE'S ANSWERS TO PART I, QUESTIONS 1-5

Ever Used Donnelly		
Yes	91	100%
No	0	0

Library Usually Used		
Donnelly	78	86%
Science Library	8	9
Use both equally	5	5

Know Where Reference Desk Is		
Yes	90	99%
No	1	1

Ever Needed to Consult Reference Staff		
Yes	60	66%
No	31	34

Occasion Last Used Reference		
Ever consulted	60	100%
Help find source material for paper, research project	37	62
ILL	13	22
How to use card catalog, LCS, reference tools	4	7
Where to find reference tools	4	7
Other	5	8

What Does Reference Staff Do?		
Help find books, periodicals; help get started on a project	67	74%
Answer questions; show how to use LCS, card catalog, indexes	29	32
ILL	23	25
Maintain reference collection	8	9
Online searches	5	5
Other	13	14
Don't know	8	9

indicated, in Lake Forest's 1981 self study, they had never sought reference assistance), even before questions mentioning specific services

TABLE 3

WHEN STUDENTS FIRST LEARNED OF REFERENCE DEPARTMENT

Orientation tour	30	33%
Just walked into it, found on own	17	19
Through class	11	12
Expected it, always knew	11	12
Saw sign	9	10
Learned from friend or professor	8	9
Other	4	4
Don't know	3	3

were asked, the students demonstrated a solid sense of what the reference staff does. In response to the question, "As far as you know, what are the main things that people who work in the reference department do?", only eight claimed to have no idea, while seventy-four per cent answered that the reference librarians are there to help students find books and periodical articles for a paper or research project, or to help get them going on a project. Thirty-two per cent mentioned that the reference staff will answer questions and show students how to use the Library Computer System, card catalog, or other reference tools with which they are unfamiliar, and twenty-five per cent mentioned the Interlibrary Loan service.

This high level of awareness may well be greatly due to orientation tours, since, in response to the question, "When did you first learn that there is a reference department in the library?", one-third of the students mentioned orientation tours (see Table 3). In addition, knowledge that Donnelley has a reference desk might be attributed to its prominent location and the fact that it is clearly marked. One encounters the reference desk immediately upon entering the library--as several students remarked, "It's right there," "It's hard to miss." Twenty-nine

TABLE 4

COMBINED SAMPLE'S ANSWERS TO PART I, QUESTIONS 7-9

Had Classes With Library Instruction			Had Library Instruction in Major		
Yes	71	78%	Yes	32	64%
No	20	22	No	18	36
Done Independent Research (Juniors and Seniors)			**Had a Job in a Library**		
Yes	21	50%	Yes	21	23%
No	21	50	No	70	77

per cent of the respondents merely came upon the desk or saw the sign. Certainly, even among students who learned about the reference department at the time of orientation, it seems reasonable to assume that the desk's location reinforces that experience.

When asked about library instruction in class, most said they had had classes which devoted sessions to the discussion of library tools and research methods, although, of those with declared majors, fewer had received such instruction in their major fields (see Table 4). Only half of the third and fourth year students had pursued any sort of independent research, and only twenty-three per cent of the entire sample had ever worked in a library. (However, eighteen of the twenty-one students who had ever had a library job had worked in Donnelley.)

Awareness of services

Table 5 shows the combined sample's answers to the questions testing awareness of specific reference services. For the thirteen

TABLE 5

COMBINED SAMPLE'S ANSWERS TO PART II, QUESTIONS 1-17

Services	Yes		No		Don't know	
Help with card catalog, LCS	88	97%	--	--	3	3%
Useful, would need	83	91	7	8%	1	1
Borrow from other libraries	83	91	--	--	8	9
Useful, would need	82	90	9	10	--	--
Pass to another library	43	47	1	1	47	52
Useful, would need	78	86	11	12	2	2
Resume[a]	1	1	35	39	55	60
Useful, would need	4	4	82	90	5	6
How to use reference tools	91	100	--	--	--	--
Useful, would need	83	91	8	9	--	--
Online searching	26	29	19	21	46	50
Useful, would need	85	94	4	4	2	2
Translate articles[a]	10	11	11	12	70	77
Useful, would need	32	35	57	63	2	2
Post hours	51	56	19	21	21	23
Useful, would need	78	86	12	13	1	1
In science library[a]	15	17	22	24	54	59
Useful, would need	42	46	47	52	2	2
Private appointments	42	46	8	9	41	45
Useful, would need	73	80	18	20	--	--
Printed guides, handouts	74	81	5	6	12	13
Useful, would need	85	93	6	7	--	--
Footnotes, bibliography[a]	2	2	67	74	22	24
Useful, would need	8	9	82	90	1	1
Statistical information	87	96	--	--	4	4
Useful, would need	83	91	8	9	--	--
Factual question	74	81	1	1	16	18
Useful, would need	81	89	10	11	--	--
Phone numbers, addresses	43	47	9	10	39	43
Useful, would need	67	74	20	22	4	4
Book/film reviews	82	90	--	--	9	10
Useful, would need	69	76	21	23	1	1
Biographical information	80	88	--	--	11	12
Useful, would need	83	91	8	9	--	--

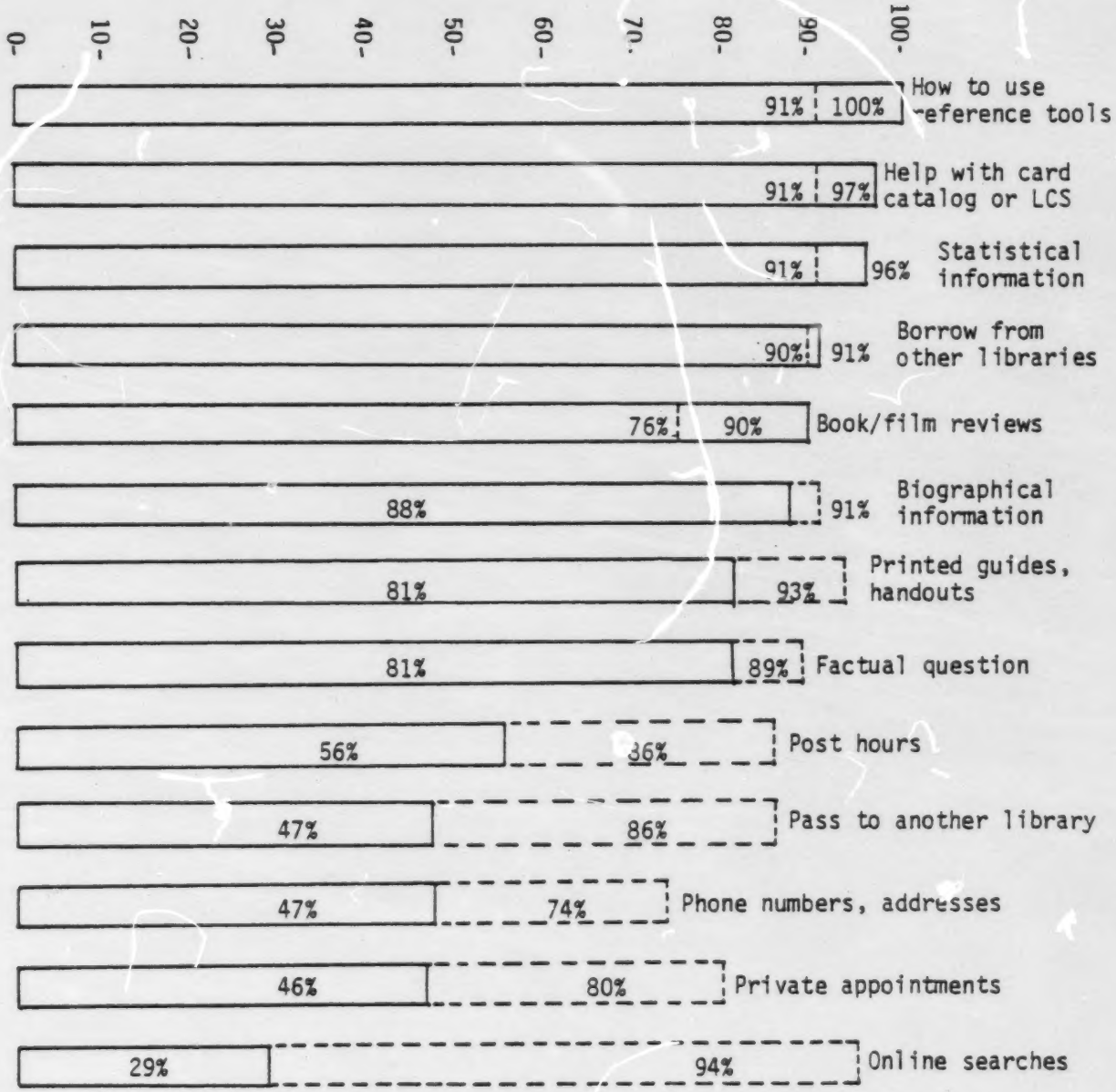
[a]Services not offered.

services currently available, Fig. 1 provides a graphic demonstration of students' awareness of each service compared with their desire for it, and Table 6 details the same by class and by major discipline.

For eight of the services, awareness was high. Everyone in the sample knew that reference librarians will show students how to use reference tools, and better than ninety per cent knew that they can go to the reference desk for help with the card catalog or LCS, for Interlibrary Loan service, or for help finding statistical information or data. It is interesting to note that fewer students than were aware of these five services indicated a need or desire for them; they were not answering "yes" perfunctorily. Between eighty and ninety per cent knew that printed subject guides are available ("tons of them") and that the reference staff will help locate biographical information or help find the answer to a factual question, but, for these three services, the number of students who would need that service or find it useful slightly exceeded the number of those aware of it. (One might note that most of these eight services could be viewed as "traditional," and are encompassed by the answers provided by the greatest percentage of students in response to the earlier question asking what the reference staff does.)

In comparison, combined awareness of the remaining five services (which, aside from help finding phone numbers and addresses, might be termed "non-traditional") was low, and was, again, exceeded by expressed desire. Fifty-six per cent knew that a detailed schedule of reference hours is posted near the desk each week, while twenty-one per cent (the highest number of incorrect "no" answers) indicated this is not an available service. In response to this question, many students commented, "They're always there," or, "They are there most of the time." Such

Fig. 1.--Combined sample's awareness of (solid lines) and desire for (dashed lines) thirteen reference services.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10-
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80-
90-
100-
How to use reference tools
91%
100%
Help with card catalog or LCS
91%
97%
Statistical information
91%
96%
Borrow from other libraries
90%
91%
Book/film reviews
76%
90%
Biographical information
88%
91%
Printed guides, handouts
81%
93%
Factual question
81%
89%
Post hours
56%
86%
Pass to another library
47%
86%
Phone numbers, addresses
47%
74%
Private appointments
46%
80%
Online searches
29%
94%

TABLE 6

PERCENTAGE OF STUDENTS AWARE OF/EXPRESSING DESIRE FOR THIRTEEN SERVICES, BY CLASS AND MAJOR

Services	Total Sample	Fresh-men	Sopho-mores	Juniors	Seniors	Social Sciences	Human-ities	Sciences	Unde-clared
Help with card catalog, LCS	97	96	96	95	100	100	100	100	88
Useful, would need	91	92	96	95	82	90	91	100	88
Borrow from other libraries	91	83	84	95	100	93	91	100	88
Useful, would need	90	83	92	95	91	90	91	89	100
Pass to another library	47	29	36	50	77	57	55	44	53
Useful, would need	86	79	84	90	91	86	100	100	76
How to use reference tools	100	100	100	100	100	100	100	100	100
Useful, would need	91	92	84	90	100	90	100	99	88
Online searching	29	17	32	35	32	27	46	45	29
Useful, would need	94	96	88	100	91	93	82	100	94
Post hours	56	46	56	75	50	54	73	33	76
Useful, would need	86	83	84	90	86	90	73	78	94
Private appointments	46	33	36	65	54	53	64	56	35
Useful, would need	80	75	81	90	77	87	64	78	88
Printed guides, handouts	81	79	80	80	86	80	100	45	94
Useful, would need	93	92	96	90	95	93	100	78	100
Statistical information	96	92	96	95	100	97	91	100	100
Useful, would need	91	92	92	95	86	97	73	11	--
Factual question	81	83	88	70	82	80	91	67	82
Useful, would need	89	92	88	90	86	77	100	100	94
Phone numbers, addresses	47	50	52	40	45	50	37	22	59
Useful, would need	74	71	84	70	68	80	73	56	76
Book/film reviews	90	92	84	95	91	87	91	89	94
Useful, would need	76	83	76	60	82	70	91	67	71
Biographical information	88	83	92	85	91	90	82	89	94
Useful, would need	91	96	92	85	91	87	91	89	94

remarks may explain the lower level of awareness, yet eighty-six per cent still indicated desire for such a service.

A great difference (thirty-nine percentage points) between the percentage of students aware of a service and the percentage to whom it would be useful was demonstrated in response to the question regarding a pass to another library. It was apparent from comments that many students believe that their Lake Forest student identification cards are sufficient to gain entrance to any library, and others had some difficulty distinguishing between this service and Interlibrary Loan.

I was not surprised that online searching was the service of which students were least aware. When discussing my tentative questionnaire with Donnelley's reference librarians, I got the impression from them that this is not a service they emphasize. It was suggested that those students who knew of the service were probably introduced to it in class. To corroborate this suspicion, and to weed out students who were actually thinking of the Library Computer System, all those who answered "yes" to this question were then asked how they learned of the service. Indeed, as shown in Table 7, thirty-five per cent of the twenty-six students indicating awareness had learned of online searching through class.

(It was clear that, when asked about this service, nine of the students misunderstood: hearing the word "computer," they thought the question referred to the Library Computer System. In those cases, the question, "Will the reference librarians ever use a computer to provide you with a printed bibliography ...?" was asked again. Although one might argue that the responses listed in Table 7 could well have been offered by students thinking of the LCS, my own probes and students' comments such as, "They did an ERIC search for me," and "They do it very

TABLE 7

HOW STUDENTS LEARNED OF ONLINE SEARCH SERVICE

Number aware	26	100%
Through class	9	35
Personal experience	9	35
Learned from friends, other student	3	12
Referred to by professor, another librarian	2	8
Work in Donnelley	2	8
Other	3	12

infrequently, because of the cost," indicated that these twenty-six students and I were referring to the same service.)

Several questions referred to services that are not offered at Donnelley. Nearly three-fourths of the sample answered a definite "no" when asked if the reference librarians would prepare their footnotes, while only two students answered "yes." Overall, though, most students answered "don't know," rather than "no," in response to questions about unavailable services. This makes sense since existing services, simply by being available, can attract students' attention; nonexistent services, however, are not apt to be conspicuous in their absence. The suggestion is that most students indicating knowledge of a service were not guessing or giving what they considered to be a reasonable answer. Nonetheless, because a few students believed nonexisting services were available, this notion cannot be uniformly relied upon.

The question referring to a translation service may not have been worded appropriately for this study; I suspect that some students who thought the service was available, or who would expect it to be available, may have been thinking more in terms of a referral service than of an actual translation service, as was intended. Yet, one of the thirty-two students who would expect this reference service said so because she

"ordered a book from Interlibrary Loan, and it turned out to be in Finnish." Fifteen students thought a reference librarian was regularly available in the Science Library. Others commented that there is a librarian or that there are student assistants who work there; it may be of these assistants that the fifteen students were thinking. It should be noted here that forty-six per cent of the sample (including five of the nine science majors) felt that having a reference librarian on duty in the Science Library would be a useful service to them.

Since one reason for stratification of the sample was to determine if awareness differences exist among the subgroups, the number of correct answers provided to Part II's questions 1 through 17 was determined for each of the strata. Correct responses comprised answers of "no" to questions 4, 7, 9, and 12, and "yes" to the other thirteen questions; "don't know" answers were counted as incorrect in all cases. No one achieved a perfect score of seventeen correct responses.

Before analyzing these data, one must recognize the difficulty which lies in interpreting these "correct" answers. If a student answers "yes," it does not necessarily follow that the student knows for a fact that a service is offered. Rather, the implication is that the student has either actually used the service, or has read or heard of it; however, it is possible that some students responded on the basis of a strong suspicion that a service is available. Similarly, a "don't know" answer may mean that the student has no idea whether or not a service is available, or it could mean, "I think not," or, "I think so."

Table 8 presents the cumulative percentage of questions answered correctly, by class and by major; for example, of all the questions answered by sophomores in the humanities, seventy-four per cent were

TABLE 8

PERCENTAGE OF CORRECT ANSWERS[a]

	Freshmen	Sophomores	Juniors	Seniors	Total
Humanities	--	7[illegible] (71)[a]	65 (69)	74 (82)	71 (78)
Social Sciences	--	51 (62)	71 (81)	68 (78)	64 (74)
Sciences	--	55 (56)	69 (79)	67 (69)	64 (68)
Undeclared	60 (68)	73 (81)	56 (66)	--	63 (72)
Ever consulted reference					67 (74)
Never consulted reference					61 (70)
Total	60 (68)	64 (73)	66 (75)	69 (78)	65 (73)

[a]Figures in parentheses are percentage of correct answers when questions 4, 7, 9, and 12 are omitted.

answered correctly. Percentages of correct answers provided by those who had ever consulted reference and those who had not are also shown.

For the twelve subgroups, correct answers range from 51 to 74 per cent of total answers. Senior and sophomore humanities majors scored the highest, while sophomores in the social sciences scored the lowest. When answers are grouped by class, the percentage of correct answers increases--persistently, but in small increments--with class year. In comparison with other majors, those in the humanities were most aware of the reference services available. The percentage of cor-

rect answers provided by those who had ever consulted the reference staff surpassed that of those who never had by only six percentage points. Overall, sixty-five per cent of the sample's answers were correct.

In comparison to the undergraduates in Sandock's study, the Lake Forest students' percentage of correct answers is high--the University of Chicago college students' answers were forty-four per cent correct overall, with subgroups' scores ranging only from thirty-three to sixty-five per cent. However, as noted earlier, the majority of answers to questions 4, 7, 9, and 12--questions about services not offered at Donnelley--were "don't know." In general, it seems that students were reluctant to say "no." Inasmuch as the primary purpose of this study was to determine awareness of available services, and inasmuch as these four questions were included more with the intent to discourage indiscriminate "yes" answers, it was considered worthwhile to calculate these percentages again, omitting questions to which the correct answer is "no." These new percentages are shown in parentheses in Table 8. Overall, correct answers to the remaining thirteen questions reached seventy-three per cent and subgroups' answers ranged from fifty-six to eighty-two per cent correct. Even those who had never consulted reference answered seventy per cent of the questions correctly. Students in the sciences gained slightly fewer percentage points than the other disciplines when "no questions" were excluded.

The data in Table 8 raise the question of whether the effect of a student's class is real or a possible statistical fluctuation. To test this, I ran a multiple regression, with the aid of the computer statistical package, IDA, of the dependent variable SCORE, on the independent variable CLASS (0 for freshmen, 1 for sophomores, 2 for juniors, 3 for seniors); the indicator variables HUM, SOC, and SCI (for each

indicator, 1 was assigned to those students possessing the trait, 0 to those without it); and the interaction terms XHUM, XSOC, and XSCI (the products of CLASS with HUM, SOC, and SCI to allow the slope of CLASS to change with major discipline). Regression was used, instead of a traditional analysis of variance, because of the varying number of subjects in each cell.

Results show that the effect of the independent variables on SCORE is weak: the t-statistics, which are measures of significance, are low, as shown in Table 9. In comparison with the other independent variables, SOC has a B-coefficient with a higher absolute value and a higher t-value, while the B-coefficient for XSOC is highest of all those for interaction variables. The implication is that social science majors at Lake Forest are less knowledgeable, as a whole, than other majors, but that the difference decreases and their score improves, relative to other majors, as they progress. However, this must be considered only as suggestive since an analysis of variance for the regression yields an F-ratio of only 1.86, which is not significant.

If a second regression is run, this time of SCORE on only CLASS, SOC, and XSOC, and eliminating those independent variables with the lowest t-values in the first regression (but forcing in CLASS), the t-value for CLASS increases, although still not to a significant level, while an analysis of variance for <u>this</u> regression as a whole shows a statistically significant F-ratio of 3.61.

Results of these statistical analyses are more indicative than conclusive. It seems that, as a whole, the independent variables in combination do influence SCORE, but the data do not permit us to say conclusively which variables are significant. The regression is not

TABLE 9

REGRESSIONS OF INDEPENDENT VARIABLES ON SCORE

	Regression 1		Regression 2	
Variable	B	T	B	T
CLASS	0.4408	0.904	0.4851	1.878
HUM	1.0048	0.463	-	-
SOC	-2.3910	-1.977	-2.3218	-1.956
SCI	-1.9396	-0.980	-	-
XHUM	-0.1908	-0.194	-	-
XSOC	0.8650	1.254	-0.8207	1.498
XSCI	0.5592	0.549	-	-
Constant	10.495	24.370	10.426	26.456
R^2	0.1354		0.1107	

necessarily a good predictor for SCORE, since the R^2 values are so small; that is, there is a great deal of variability within each group.

Librarians' predictions

This study also addressed the perceptions of Donnelley's four reference librarians. When they provided predictions for the overall percentage of students who would answer "yes" to each of thirteen questions, only one of their fifty-two guesses (thirteen questions times four librarians) was correct. Of course, it was unlikely that these percentage predictions would be exactly on target. Therefore, to facilitate evaluations of these guesses, I decided to accept as satisfactory an arbitrary error of percentage points for each prediction. If five percentage points are allowed in either direction, nine more predictions can be considered correct, for a total of ten, or nineteen per cent,correct; similarly, forty per cent of the librarians' guesses fall

TABLE 10

LIBRARIANS' PERCENTAGE RANGE PREDICTIONS
WHEN COMPARED WITH ACTUAL PERCENTAGES
OF CORRECT ANSWERS

Correct	12	23%
Low	26	50
High	14	27

within a range of ten percentage points from the actual figures.

The librarians were also asked to state ranges within which each of their percentage predictions was likely to fall; twenty-three per cent of these predicted ranges included the actual percentages. Within their own sense of uncertainty, then, fewer than one-fourth of the librarians' predictions were correct. On the whole, these predictions were low, as shown in Table 10. While twelve of the ranges included the actual percentages of students answering "yes," more than twice that number--fifty per cent of the ranges--fell short of the actual figures. (It should be noted, though, that Librarian I's percentage range predictions tipped the scale: three were correct, while ten were low. If the other librarians' guesses are considered alone, the score is twenty-three per cent correct, forty-one per cent low, and thirty-six per cent high.)

Table 11 compares the actual percentages of correct answers with the librarians' percentage and percentage range predictions for the thirteen available services, while Fig. 2 presents these data in graph form. Each of Donnelley's four librarians predicted at least two ranges which included the actual percentages of students aware of those services. The percentage of students who answered correctly when asked about

.TABLE 11

LIBRARIANS' PREDICTIONS OF PERCENTAGE OF STUDENTS AWARE OF THIRTEEN SERVICES

	Actual % Aware	Librarians' % and % Range Predictions			
		I	II	III	IV
How to use reference tools	100	70 (40-80)	95 (90-95)	75 (70-80)	90 (85-95)
Help with card catalog, LCS	97	60 (30-70)	95 (90-95)	90 (85-95)	90 (75-95)
Statistical information	96	65 (50-80)	85 (80-90)	80 (75-85)	90 (85-95)
Borrow from other libraries	91	50 (30-70)	85 (80-90)	75 (70-80)	75 (50-80)
Book/film reviews	90	30 (20-50)	95 (85-95)	75 (70-80)	90 (85-95)
Biographical information	88	50 (30-75)	95 (85-95)	85 (80-90)	90 (85-95)
Printed guides, handouts	81	80 (50-90)	85 (75-85)	65 (60-70)	90 (85-95)
Factual question	81	65 (50-80)	95 (85-95)	90 (85-95)	90 (85-95)
Post hours	56	10 (0-25)	80 (80-90)	55 (50-60)	25 (20-50)
Pass to another library	47	30 (20-50)	75 (70-85)	60 (55-65)	50 (40-60)
Phone numbers, addresses	47	15 (5-30)	80 (80-90)	75 (70-80)	80 (75-90)
Private appointments	46	10 (5-25)	60 (60-70)	40 (35-45)	60 (50-70)
Online searching	29	20 (10-40)	75 (70-85)	55 (50-60)	50 (40-80)

Fig. 2.--Actual percentages of students' correct answers (bars) compared with librarians' percentage and percentage range predictions (lines).

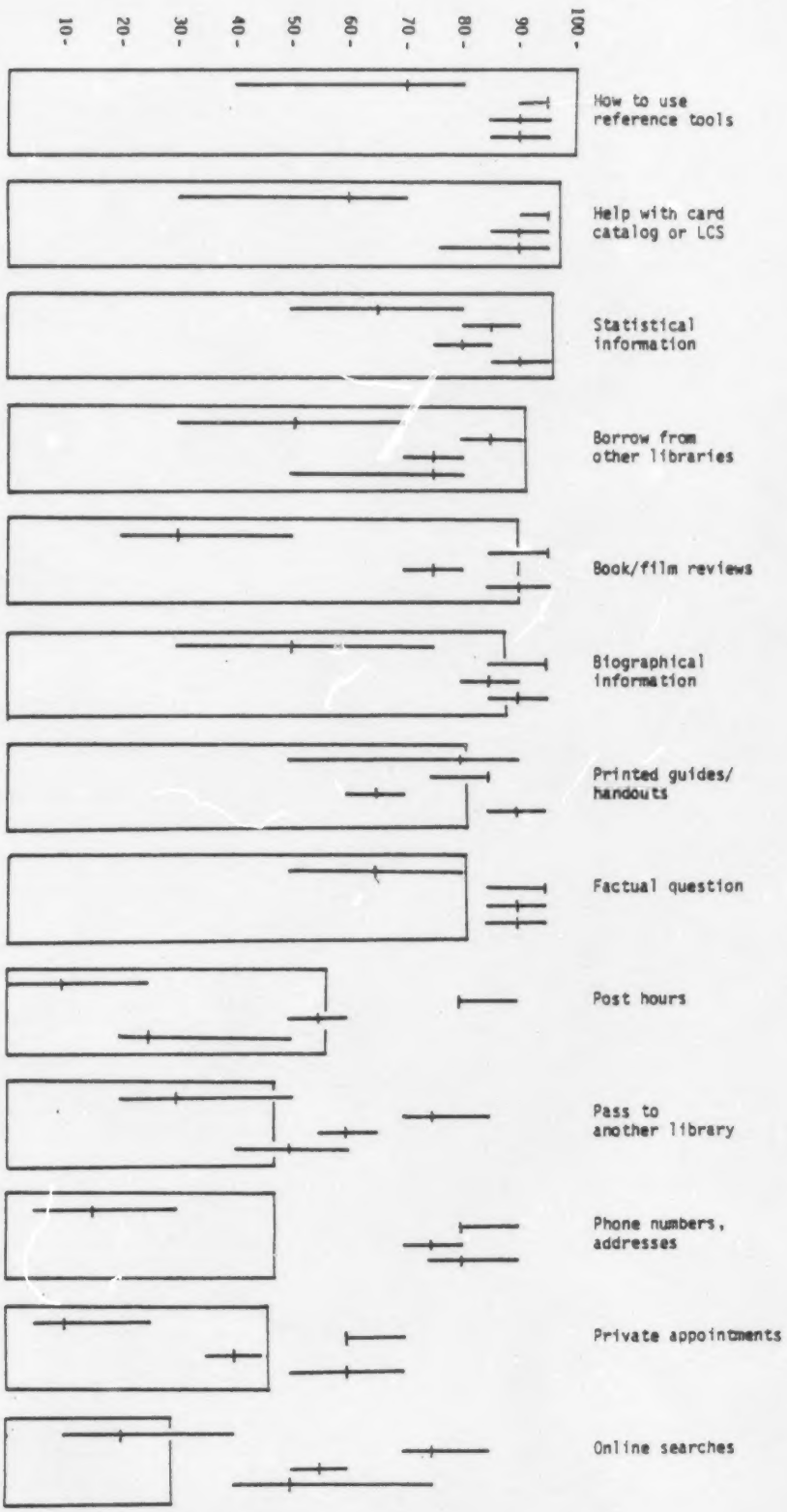
10
20
30
40
50
60
70
80
90
100
How to use reference tools
Help with card catalog or LCS
Statistical information
Borrow from other libraries
Book/film reviews
Biographical information
Printed guides/ handouts
Factual question
Post hours
Pass to another library
Phone numbers, addresses
Private appointments
Online searches

TABLE 12

FREQUENCY DISTRIBUTIONS OF LIBRARIANS' PERCENTAGE PREDICTIONS AND OF ACTUAL PERCENTAGES OF CORRECT YES ANSWERS

	Predictions		Actuals		Ratio
0- 49%	8	15%	4	31%	.48
50- 69	13	25	1	8	3.13
70- 79	8	15	-	-	-
80- 89	9	18	3	23	.78
90-100	14	27	5	38	.71

biographical information and printed subject guides was included in the ranges predicted by three librarians. Of the thirteen services, that of helping to find telephone numbers and addresses was the one for which the Donnelley librarians were least able to predict students' answers; the least difference between the actual percentage and the ranges predicted for this service was seventeen points.

For the four services of which Lake Forest students were most aware, not one of the librarians' percentage range predictions was high enough. On the other hand, most of their predictions for services of which students were least aware were too high. It seems that the librarians were reluctant to make predictions at either extreme. Instead they systematically tended to state conservative estimates. This phenomenon is underlined by Table 12, which compares the frequency distributions of actual percentages of correct answers with those predicted by Donnelley's reference librarians.

The Pearson correlation coefficient is one measure of how success-

fully the librarians guessed the percentages of correct answers. A quick glance at the correlation coefficients, which average 0.77, of each librarian's best guesses and the actual percentages leads one to infer that there is a fairly strong correlation between the two--that, although generally low on the whole, the guesses move up and down with the actual figures. Yet, a scatter diagram of one librarian's best guesses against the actual percentages (Fig. 3) illustrates why these correlation coefficients are so high: the data fall into two, well separated blocks. Despite great variability in each of the blocks, they do define a straight line, which is what the correlation coefficient measures. (As an aside, the correlation coefficients of each librarian's best guesses compared with those of his colleagues average even lower--0.73--than when compared with actual percentages, although the guesses of Librarians II and III were very closely correlated, with a correlation coefficient of 0.89.)

Students' comments

Finally, the Lake Forest students' answers to the last three questions held no surprises. By far, the most important reference service to them is assistance in finding source materials--books, journal articles, government documents, and so forth--and in designing a search strategy (see Table 13). Many mentioned that they consider help using the Library Computer System, the card catalog, and various reference tools to be an important service, and nearly the same number of students indicated Interlibrary Loan, the LCS, or a pass to another library as important to them. Several students mentioned general availability of a reference librarian as an important service.

When asked if there were any services they would like to see added to those already available in Donnelley, eighty per cent of the students

Fig. 3.--Librarian I's predictions vs. actual percentages of correct answers.

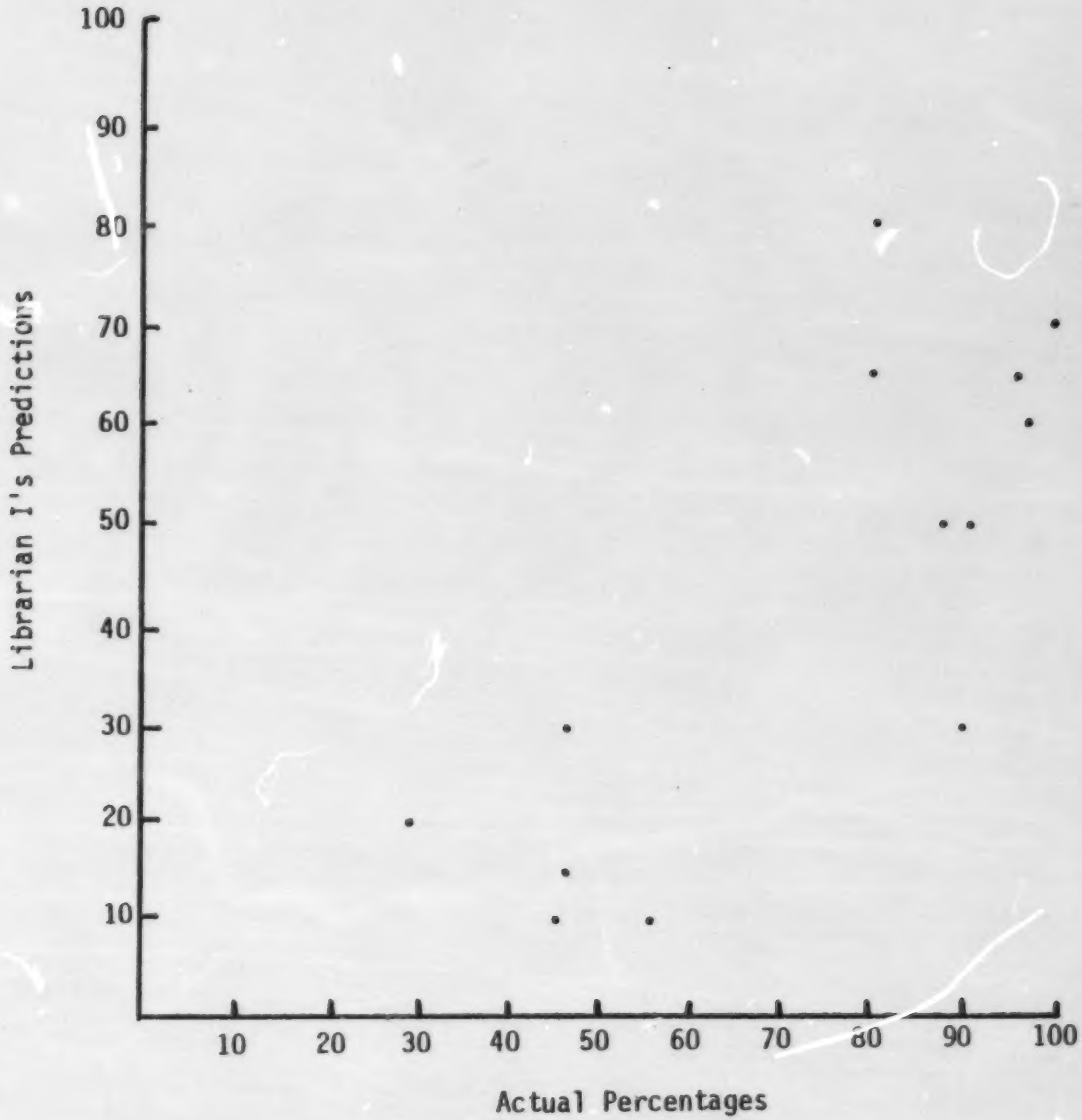
Librarian I's Predictions
100
90
80
70
60
50
40
30
20
10
10
20
30
40
50
60
70
80
90
100
Actual Percentages

TABLE 13

REFERENCE SERVICES STUDENTS CONSIDER MOST IMPORTANT

Help finding books, periodicals, government documents; help getting started on a project	54	59%
Help using LCS, card catalog, indexes, and abstracts	41	45
ILL, LCS, pass to another library	38	42
Just being there	11	12
Maintenance of reference collection	8	9
Help finding facts, statistics	8	9
Online searches	7	8
Introductory sessions	6	7
Other	22	24
Don't know/can't say	2	2

interviewed said "no" or that they could think of none offhand, but there were also several suggestions (see Table 14). Four students expressed desire for a larger reference staff or extended reference hours; three students (one in sciences, two in social sciences) said they would like to see a reference librarian in the science library or an increased emphasis on science reference. The Library Computer System was mentioned by two students: one suggested that all freshmen be taught how to use it, another said the LCS is confusing to use and thinks more time should be spent instructing students in its use. A few suggestions were not for references services, but it might be worth nothing that four of them were for a wider selection of newspapers and periodicals.

For the most part, the students had little to add when invited to

TABLE 14

REFERENCE SERVICES STUDENTS WOULD LIKE TO SEE ADDED

Total reference suggestions	15	16%
Expand staff/extend hours	4	4
Service in science library/do more with sciences	3	3
Expand online services	3	3
LCS instruction	2	2
Other	3	3
Non-reference suggestions	6	7
No mention	73	80

make comments at the end of the interview; fifty-six per cent of them answered "no" to the last question (see Table 15). There was some criticism ("The student assistants need more training"--so they can be of more help in the librarians' absence--"Interlibrary Loan is slow sometimes"), but most of the remarks about the reference staff, services, and collections were favorable, albeit general: "They're always helpful," "They do a good job," "Interlibrary Loan is nice to have." Again, two students spoke in favor of extended hours, and another said he could use help with chemistry sources. As with the previous question, there were several "non-reference" remarks; these were divided between positive comments about Donnelley in general ("It's a good library") and miscellaneous complaints (two students mentioned noise, three complained about the collection's limitation in certain subject areas).

TABLE 15

COMBINED SAMPLE'S COMMENTS

Favorable comments	29	32%
Reference	21	23
General	8	9
Critical comments	14	15
Reference	6	7
General	8	9
No comment	51	56

CHAPTER IV

CONCLUSION

The principle aim in conducting this study was to ascertain the extent to which Lake Forest College students are aware of existing reference services, and to determine if the group which is uninformed can be characterized. In comparison to the students in Mollie Sandock's study at the University of Chicago in 1975, or the faculty in Jerold Nelson's study in 1973, Lake Forest students' awareness of reference services was found to be relatively high. Overall, as expected in this college library with its policy of encouraging use, these students were aware of close to three-quarters of the services available to them, and, even without prompting, they had a strong general idea of what to expect of the reference staff. For four services, awareness exceeded expressed need or desire. Yet, as indicated in similar studies, there are some services which would be more heavily used if students knew they were offered; for the remainder of the thirteen available services, the percentage of students indicating desire was higher than the percentage aware. For five services, this difference was particularly high--more aggressive promotion of those services might be considered by Donnelley's reference staff. Again, as in the Sandock and Nelson studies, there was some indication that awareness of reference services was linked to major discipline, level of study, and, to some extent, experience.

At the same time, the study tested, in a new setting, a revised

version of Sandock's tool, one which could conceivably be used by a variety of libraries, and it was found to work well when directed at liberal arts college undergraduates. Finally, the Lake Forest librarians' perceptions of students' awareness of reference services were compared with their actual awareness and it was clear that personality traits influenced predictions. The discrepancies between the students' answers and the librarians' predictions, even in this library where there is strong service, suggest that, where the alternative is merely to rely on impressions, a similar methodology could be used profitably by other reference librarians wanting to confirm or assess user awareness.

APPENDIX

Questionnaire

I. I'm a graduate student in the library school at the University of Chicago. I'm conducting a study to determine how well Donnelley Library makes Lake Forest students aware of some of its services. You were randomly selected to represent your class in this study, and I wonder if you'd mind answering some questions about your own experiences at Donnelley.

1. Have you ever had occasion to use the Donnelley library?

2. Do you usually use Donnelley or the Science Library?

I'd particularly like to ask you about the reference department in Donnelley.

3. Do you know where the reference desk is in Donnelley?

4. As far as you know, what are the main things that people who work in the reference department do?

5. Have you ever needed to consult the reference staff?

   Can you think of the last time? What were the circumstances?

6. When did you first learn that there is a reference department in the library?

7. Have any of your classes included sessions when library tools or library research methods were discussed, either by a librarian or by your professor?

   In particular, have any classes in your major included library instruction?

8. Have your studies included any independent research, that is, tutorials, research projects, or a thesis?

9. Have you ever had a job in a library? In Donnelley?

II. Now I'm going to ask you some questions about the services offered by the reference department in Donnelley. In asking you these questions, I'm merely trying to find out how well the reference department conveys what it does and does not do; in other words, some of the services I will mention are offered by Donnelley, while others may not be. You can answer simply "yes," "no," or "don't know."

1. Will the reference librarians help you use the card catalog or online catalog (the LCS library computer system) if you are having trouble?

   If yes: Is this service useful to you?
   If no or don't know:
   Is this a service you would need from time to time?

2. Will the reference department attempt to borrow materials, that Lake Forest does not own, from another library so that you can use them here?

   Is this useful to you?
   Is this a service you would need from time to time?

3. Will they give you a pass, or letter of introduction, to another library so that you can use material there?

   Is this useful to you?
   Is this a service you would need from time to time?

* 4. Will they prepare a resume for you if you are looking for a job?

   Is this useful to you?
   Is this a service you would expect from a reference librarian?

5. Will the reference librarians show you how to use reference tools, such as indexes to periodicals, magazines, or newspapers?

   Is this useful to you?
   Is this a service you would need from time to time?

6. Will the reference librarians ever use a computer to provide you with a printed bibliography, or list, of articles on your topic?

   If yes: How did you learn of this service?
   Is it useful to you?
   If no: Is this a service you would need from time to time?

* 7. Will they arrange to have a short article translated if it's written in a foreign language?

   Is this useful to you?
   Is this a service you would expect from a reference librarian?

8. Does the reference department post scheduled hours so that you can tell when a reference librarian will be on duty each day?

   Is this useful to you?
   Is this a service you would need from time to time?

* 9. Is there a reference librarian available in the Science Library at least for some time each day?

   Is this useful to you?
   Is this a service you would need from time to time?

10. Will the reference librarians arrange private appointments to help you with your research?

   Is this useful to you?
   Is this a service you would need from time to time?

11. Do they have handouts and printed guides which list useful sources on various subjects to help you with your research?

   Is this useful to you?
   Is this a service you would need from time to time?

*12. Will they prepare your footnotes or bibliography in the proper format for a term paper?

   Is this useful to you?
   Is this a service you would expect from a reference librarian?

13. Will they help you find statistical information or data?

   Is this useful to you?
   Is this a service you would need from time to time?

14. Will they help you find the answer to a factual question?

   Is this useful to you?
   Is this a service you would need from time to time?

15. What about the phone numbers and addresses of individuals, businesses, or institutions? Will they help you find those?

   Is this useful to you?
   Is this a service you would need from time to time?

16. Will they help you find book or film reviews?

   Is this useful to you?
   Is this a service you would need from time to time?

17. And finally, biographical information?

    Is this useful to you?
    Is this a service you would need from time to time?

18. What would you say are the two or three more important reference services a library could offer you?

19. Are there any reference services which you would like to see added to those already offered in Donnelley?

20. Are there any other comments you would like to make?

Thank you very much.

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